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Title 3D-CE1h results on Depth Map Disocclusion Coding by Poznan University of
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1 Introduction

This documents presents Core Experiment 1 for High Efficiency Video Coding (HEVC) based 3D Video Coding [1] results attained by Poznan University of Technology. Modification of Disocclusion Coding [2] called Depth Map Disocclusion Coding was investigated Tool was evaluated according to the common test conditions [3]. Documents provides results in terms of rate and distortion both coded and synthesized views.

2 Short tool description

The Depth Map Disocclusion Coding is a modification of Disocclusion Coding tool [2] existing in 3D-HTM that utilize synthesized image generated from base view, at spatial position of coded view, for prediction of disoccluded regions of the coded view. Base on that prediction only disoccluded regions of dependent view depth maps are transmitted to the decoder. Non transmitted regions are synthesized at the receiver.

Tools in modification of fully tested Disocclusion Coding tool form 3D-HTM version 0.5 (0.3 poznan_univ).

3 Test Platform

The simulations results was generated on a ~80 core cluster system. This cluster platform's processing units have the following specifications:

- Processor: Intel Xeon X5675
- Clock Speed: 3.06 GHz
- Memory: approx. 4 GB per Core
- OS: 64-bit Windows Server 2008
- Compiler: Microsoft Visual Studio 2008 (64 bit)

4 Results

Table 1. Simulation results in term of BD-rate.

	Texture Coding		Synthesized Views		Complexity estimate (ratio to anchor)		
	BD-rate (piecewise cubic)	BD-rate (cubic)	BD-rate (piecewise cubic)	BD-rate (cubic)	Encoder Time, %	Decoder Time, %	Rendering Time, %
Poznan Street	0,00%	0,00%	-0,17%	-0,24%	90%	140%	99%
Poznan Hall2	0,00%	0,00%	0,07%	0,07%	83%	138%	101%
Undo Dancer	0,00%	0,00%	0,33%	0,35%	93%	144%	101%
GT-Fly	0,00%	0,00%	1,11%	1,11%	80%	143%	100%
Kendo	0,00%	0,00%	-1,34%	-1,35%	92%	123%	100%
Balloons	0,00%	0,00%	-1,48%	-1,52%	96%	123%	99%
NewspaperCC	0,00%	0,00%	-0,34%	-0,37%	86%	145%	100%
Average	0,00%	0,00%	-0,26%	-0,28%	88%	137%	100%

5 Conclusions

Attained results was not verified because some cross checker problems with decoder crush. Further study is needed and result will be cross verified until next meeting.

6 References

- [1] Anthony Vetro, Karsten Müller, "Description of Core experiments in 3D video coding", ISO/IEC JTC1/SC29/WG11 MPEG, N12561 2012.
- [2] Heiko Schwarz, Krzysztof Wegner, „Test Model under Consideration for HEVC based 3D video coding”, ISO/IEC JTC1/SC29/WG11 MPEG 2011 / N12559, San Jose, USA, Luty 2012
- [3] Dmytro Rusanovskyy Heiko Schwarz, "Common Test Conditions for HEVC- and AVC-based 3DV," ISO/IEC JTC1/SC29/WG11 MPEG, N12560 2012.
- [3] M. Domański, T. Grajek, K. Klimaszewski, M. Kurc, O. Stankiewicz, J. Stankowski, K. Wegner, "Poznań Multiview Video Test Sequences and Camera Parameters", ISO/IEC JTC1/SC29/WG11 MPEG 2009/M17050, Xian, China, October 2009.